

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

- 5 (i) APPLICANT: Robert G. Ulrich,  
Mark A. Olson  
Sina Bavari
- 10 (ii) TITLE OF INVENTION: Bacterial Superantigen  
Vaccines
- (iii) NUMBER OF SEQUENCES:16
- 15 (iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: John Moran  
(B) STREET: US Army MPMC -504 Scott Street  
MCMR-JA (John Moran-Patent Atty)  
(C) CITY: FORT DETRICK  
(D) STATE: MARYLAND  
20 (E) COUNTRY: USA  
(F) ZIP: 21702-5012
- (v) COMPUTER READABLE FORM:  
25 (A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: Apple Macintosh  
(C) OPERATING SYSTEM: Macintosh 7.5  
(D) SOFTWARE: Microsoft Word 6.0
- 30 (vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER:  
(B) FILING DATE:  
(C) CLASSIFICATION:
- 35 (vii) PRIOR APPLICATION DATA:  
(A) APPLICATION NUMBER:  
(B) FILING DATE:
- 40 (viii) ATTORNEY/AGENT INFORMATION:  
(A) NAME: Moran, John  
(B) REGISTRATION NUMBER: 26,313  
(C) REFERENCE/DOCKET NUMBER:
- 45 (ix) TELECOMMUNICATION INFORMATION  
(A) TELEPHONE: (301) 619-2065  
(B) TELEFAX: (301) 619-7714

## SEQ ID NO:1:

50 Staphylococcal enterotoxin A vaccine A489270P, periplasmic  
Gene sequence:

1 ATGAAAAAAAA CAGCATTTAC ATTACTTTTA TTCATTGCC TAACGTTGAC  
 AACAAGTCCA  
 5 61 CTTGTAAATG GTAGCGAGAA AAGCGAAGAA ATAAATGAAA AAGATTTGCG  
 AAAAAAGTCT  
 121 GAATTGCAGG GAACAGCTTT AGGCAATCTT AAACAAATCT ATTATTACAA  
 TGAAAAAGCT  
 10 181 AAAACTGAAA ATAAAGAGAG TCACGATCAA TTTCGACAGC ATACTATATT  
 GTTTAAAGGC  
 241 TTTTITACAG ATCATTCGTG GTATAACGAT TTATTAGTAC GTTTTGATTG  
 AAAGGATATT  
 15 301 GTTGATAAAT ATAAAGGGAA AAAAGTAGAC TTGTATGGTG CTTATGCTGG  
 TTATCAATGT  
 361 GCGGGTGGTA CACCAAACAA AACAGCTTGT ATGTATGGTG GTGTAACGTT  
 ACATGATAAT  
 20 421 AATCGATTGA CCGAAGAGAA AAAAGTGCCG ATCAATTTAT GGCTAGACGG  
 TAAACAAAAT  
 25 481 ACAGTACCTT TGGAAACGGT TAAAACGAAT AAGAAAAATG TAACTGTTCA  
 GGAGTTGGAT  
 541 CTTCAAGCAA GACGTTATTT ACAGGAAAAA TATAATTTAT ATAACTCTGA  
 TGTTTTTGAT  
 30 601 GGGAAGGTTT AGAGGGGATT AATCGTGTTT CATACTTCTA CAGAACCTTC  
 GGTTAATTAC  
 35 661 GATTTATTTG GTGCTCAAGG ACAGTATTCA AATACACTAT TAAGAATATA  
 TAGAGATAAT  
 721 AAAACGATTA ACTCTGAAAA CATGCATATT GATATATATT TATATACAAG  
 TTAAACATGG  
 40 781 TAGTTTTGAC CAACGTAATG TTCAGATTAT TATGAACCGA GAATAATCTA  
 SEQ ID NO: 2  
 45 Staphylococcal enterotoxin A vaccine A489270P, periplasmic:  
 Amino acid sequence  
 1 MKKTAFTLLL FIALTLTTSP LVNGSEKSEE INEKDLRKKS ELQGTALGNL  
 51 KQIYYNEKA KTENKESHDQ FRQHTILFKG FFTDHSWYND LLVRFDSKDI  
 50 101 VDKYKGKKVD LYGAYAGYQC AGGTPNKTAC MYGGVTLHDN NRLTEEKVP

151 INLWLDGKQN TVPLETVKTN KKNVTVQELD LQARRYLQEK YNLYNSDVFD  
 201 GKVQRGLIVF HTSTEPSVNY DLFGAQGOXS NTLLRIYRDN KTINSENMHI  
 251 DIYLYTS

**SEQ ID NO: 3**

Staphylococcal enterotoxin A vaccine A489270C, cytoplasmic  
 Gene sequence:

74 ATGAGAA AAGCGAAGAA ATAAATGAAA AAGATTTGCG  
 AAAAAAGTCT

121 GAATTGCAGG GAACAGCTTT AGGCAATCTT AAACAAATCT ATTATTACAA  
 TGAAAAAGCT

181 AAAACTGAAA ATAAAGAGAG TCACGATCAA TTTCGACAGC ATACTATATT  
 GTTTAAAGGC

241 TTTTTCACAG ATCATTCGTG GTATAACGAT TTATTAGTAC GTTTTGATTG  
 AAAGGATATT

301 GTTGATAAAT ATAAAGGGAA AAAAGTAGAC TTGTATGGTG CTTATGCTGG  
 TTATCAATGT

361 GCGGGTGGTA CACCAAACAA AACAGCTTGT ATGTATGGTG GTGTAACGTT  
 ACATGATAAT

421 AATCGATTGA CCGAAGAGAA AAAAGTGCCG ATCAATTTAT GGCTAGACGG  
 TAAACAAAAT

481 ACAGTACCTT TGGAAACGGT TAAAACGAAT AAGAAAAATG TAACTGTTCA  
 GGAGTTGGAT

541 CTTCAAGCAA GACGTTATTT ACAGGAAAAA TATAATTTAT ATAACCTCTGA  
 TGTTTTTGAT

601 GGGAAGGTTT AGAGGGGATT AATCGTGTTT CATACTTCTA CAGAACCTTC  
 GGTTAATTAC

661 GATTTATTTG GTGCTCAAGG ACAGTATTCA AATACACTAT TAAGAATATA  
 TAGAGATAAT

721 AAAACGATTA ACTCTGAAAA CATGCATATT GATATATATT TATATACAAG  
 TTAAACATGG

781 TAGTTTTGAC CAACGTAATG TTCAGATTAT TATGAACCGA GAATAATCTA

**SEQ ID NO: 4**

Staphylococcal enterotoxin A vaccine A489270C, cytoplasmic  
 Amino acid sequence

661 GATTTATTTG

1 MEKSEE INEKDLRKKS ELQGTALGNL KQIYYNEKA KTENKESHDQ  
47 FRQHTILFKG FFTDHSWYND LLVRFDSKDI VDKYKGKKVD LYGAYAGYQC  
5 97 AGGTPNKTAC MYGGVTLHDN NRLTEKKVP INLWLDGKON TVPLETVKTN  
147 KKNVTVQELD LQARRYLOEK YNLYNSDVFD GKVQRGLIVF HTSTEPSVNY  
10 197 DLFGAQQQYS NTLRLIYRDN KTINSENMHI DIYLYTS

**SEQ ID NO: 5**  
Staphylococcal enterotoxin B vaccine B2360210  
Gene sequence:

15 1 GAACTAGGTA GAAAAATAAT TATGAGAAAA CACTATGTTG TTAAAGATGT  
51 TTTCGTATAT AAGTTTAGGT GATGTATAGT TACTTAATTT TAAAAGCATA  
20 101 ACTTAATTAA TATAAATAAC ATGAGATTAT TAAATATAAT TAAGTTTCTT  
151 TTAATGTTTT TTTAATTGAA TATTTAAGAT TATAACATAT ATTTAAAGTG  
25 201 TATCTAGATA CTTTTTGGGA ATGTTGGATA AAGGAGATAA AAAATGTATA  
251 AGAGATTATT TATTTACAT GTAATTTTGA TATTCGCACT GATATTAGTT  
301 ATTTCTACAC CCAACGTTT AGCAGAGAGT CAACCAGATC CTAAACCAGA  
30 351 TGAGTTGCAC AAATCGAGTA AATTCAGTGG TTTGATGGAA GATATGAAAG  
401 TTTTGTATGA TGATAATCAT GTATCAGCAA TAAACGTTAA ATCTATAGAT  
35 451 CAATTTCTAT ACTTTGACTT AATATATTCT ATTAAGGACA CTAAGTTAGG  
501 GGATTATGAT AATGTTTCGAG TCGAATTTAA AAACAAAGAT TTAGCTGATA  
551 AATACAAAGA TAAATACGTA GATGTGTTTG GAGCTAATTA TTATTATCAA  
40 601 TGTTATTTTT CTAAAAAAC GAATGATATT AATTCGCATC AAACGACAA  
651 ACGAAAAACT TGTATGTATG GTGGTGTAAC TGAGCATAAT GGAAACCAAT  
701 TAGATAAATA TAGAAGTATT ACTGTTCTGGG TATTTGAAGA TGGTAAAAAT  
45 751 TTATTATCTT TTGACGTACA AACTAATAAG AAAAAGGTGA CTGCTCAAGA  
801 ATTAGATTAC CTAACGTC ACTATTTGGT GAAAAATAAA AAACCTATG  
50 851 AATTTAACAA CTCGCCTTAT GAAACGGGAT ATATTAAATT TATAGAAAAT  
901 GAGAATAGCT TTTGGTATGA CATGATGCCT GCACCAGGAG ATAAATTTGC

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951 CCAATCTAAA TATTTAATGA TGTACAATGA CAATAAAATG GTTGATTCTA  
1001 AAGATGTGAA GATTGAAGTT TATCTTACGA CAAAGAAAAA GTGAAATTAT  
1051 ATTTTAGAAA AGTAAATATG AAGAGTTAGT AATTAAGGCA GGCACCTTATA  
1101 GAGTACCTGC CTTTCTAAT ATTATTTAGT TATAGTTATT TTTGTTATAT  
1151 CTCTCTGATT TAGCATTAAAC CCCTTGTTC CATTATAGTT TTCACCAACT  
1201 TTAGCTGAAA TTGGGGGATC ATTATTATCT TTAATATGGA TAGTTACTGT  
1251 GTCGCCGTTT TTAACGATTT GTTCTCTTT TAATTTGTCA GTTAATTTTT  
1301 TCCATGCATC ATTTGCGTCA AACCTATTTT CATTGGATT TATTCTTGAC  
1351 AAATCAATTC TTTTAACACT ATCGGTATTA ATCGGCTTGT TATTAAATTT  
1401 ACTAAGTTCA TCTAATCAG CTGTACCCGT AATACTACTT TCGCCACCAT  
1451 TATTTAAATT GTACGTAACA CCAACTGTCT CATTGCTGT TTTATCGATA  
1501 ATATTTGCTT CTTTCAAAGC ATCTCTTACA TTTTCCATA AGTCTCTATC  
1551 TGTTATTICA GAAGCCTTTG CAACGTTATT AATACCATTA TAATTTGAAG  
1601 AAGAATGAAA ACCTGAACCT ACTGTTGTTA AAATAAAGC ACTTGCTATC  
1651 AATGTTCTTG TTAATAGTTT TTTATTCATT TTATTTCTC CTATAACTTA  
1701 TTTGCAATCG AT

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**SEQ ID NO: 6**

Staphylococcal enterotoxin B vaccine, B2360210

Amino acid sequence:

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MYKRLFISHVILIFALILVISTPNVLAESQDPKPKDELHKSSKF  
TGLMEDMKVLYDDNHVSAINVKSIDQFLYFDLIYSIKDTKLGDYDNVRVEFKNKDLAD  
KYKDKYVDVFGANYYYQCYFSKKTNDINSHQTDKRKTCMYGGVTEHNGNQLDKYRSIT  
VRVFEDGKNLLSFDVQTNKKKVTAEQELDYLTRHYLVKNKKLYEFNNSPYETGYIKFIE  
NENSFWDMMPPAPGDKFAQSKYLMYNDNKMVDSKDVKIEVYLTTKKK

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**SEQ ID NO: 7**Staphylococcal enterotoxin B vaccine, B899445P, periplasmic  
Gene sequence:

1 GAACTAGGTA GAAAAATAAT TATGAGAAAA CACTATGTTG TTAAAGATGT  
5 51 TTTCGTATAT AAGTTTAGGT GATGTATAGT TACTTAATTT TAAAAGCATA  
101 ACTTAATTAA TATAAATAAC ATGAGATTAT TAAATATAAT TAAGTTTCTT  
151 TTAATGTTTT TTAATTGAA TATTTAAGAT TATAACATAT ATTTAAAGTG  
10 201 TATCTAGATA CTTTTTGGGA ATGTTGGATA AAGGAGATAA AAAATGTATA  
251 AGAGATTATT TATTTACAT GTAATTTTGA TATTCGCACT GATATTAGTT  
301 ATTTCTACAC CCAACGTTTT AGCAGAGAGT CAACCAGATC CTAAACCAGA  
15 351 TGAGTTGCAC AAATCGAGTA AATTCAGTG TTTGATGGAA AATATGAAAG  
401 TTTTGTATGA TGATAATCAT GTATCAGCAA TAAACGTTAA ATCTATAGAT  
20 451 CAATTTTCGAT ACTTTGACTT AATATATTCT ATTAAGGACA CTAAGTTAGG  
501 GAATTATGAT AATGTTTCGAG TCGAATTTAA AAACAAAGAT TTAGCTGATA  
551 AATACAAAGA TAAATACGTA GATGTGTTTG GAGCTAATGC TTATTATCAA  
25 601 TGTGCTTTTT CTAAAAAAC GAATGATATT AATTCGCATC AAAC TGACAA  
651 ACGAAAAACT TGTATGTATG GTGGTGTAAC TGAGCATAAT GGAAACCAAT  
30 701 TAGATAAATA TAGAAGTATT ACTGTTTCGGG TATTTGAAGA TGGTAAAAAT  
751 TTATTATCTT TTGACGTACA AACTAATAAG AAAAAGGTGA CTGCTCAAGA  
801 ATTAGATTAC CTAACTCGTC ACTATTTGGT GAAAAATAAA AAACCTCTATG  
35 851 AATTTAACAA CTCGCCTTAT GAAACGGGAT ATATTAAATT TATAGAAAAT  
901 GAGAATAGCT TTTGGTATGA CATGATGCCT GCACCAGGAG ATAAATTTGA  
40 951 CCAATCTAAA TATTTAATGA TGTACAATGA CAATAAAATG GTTGATTCTA  
1001 AAGATGTGAA GATTGAAGTT TATCTTACGA CAAAGAAAAA GTGAAATTAT  
1051 ATTTTAGAAA AGTAAATATG AAGAGTTAGT AATTAAGGCA GGCACCTATA  
45 1101 GAGTACCTGC CTTTTCTAAT ATTATTTAGT TATAGTTATT TTTGTTATAT  
1151 CTCTCTGATT TAGCATTAAC CCCTTGTTGC CATTATAGTT TTCACCAACT  
50 1201 TTAGCTGAAA TTGGGGGATC ATTTTATCT TTACTATGGA TAGTTACTGT  
1251 GTCGCCGTTT TTAACGATTT GTTCTCTTT TAATTTGTCA GTTAATTTTT

GAGGTTAGG

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1301 TCCATGCATC ATTTGCGTCA AACCTATTTT CATTGGATT TATTCTTGAC  
1351 AAATCAATTC TTTTAACACT ATCGGTATTA ATCGGCTTGT TATTAAAATT  
1401 ACTAAGTTCA TCTAAATCAG CTGTACCCGT AATACTACTT TCGCCACCAT  
1451 TATTTAAATT GTACGTAACA CCAACTGTCT CATTGCTGT TTTATCGATA  
1501 ATATTTGCTT CTTTCAAAGC ATCTCTTACA TTTTCCATA AGTCTCTATC  
1551 TGTTATTTCA GAAGCCTTTG CAACGTTATT AATACCATTA TAATTTGAAG  
1601 AAGAATGAAA ACCTGAACCT ACTGTTGTTA AAATAAAGC ACTTGCTATC  
1651 AATGTTCTTG TTAATAGTTT TTTATTCATT TTATTTTCTC CTATAACTTA  
1701 TTTGCAATCG AT

**SEQ ID NO: 8**

Staphylococcal enterotoxin B vaccine, B899445P, periplasmic  
Amino acid sequence:

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MYKRLFISHVILIFALILVISTENVLAESQDPKPDELHKSSKF  
TGLMENMKVLYDDNHVSAINVKSIDQFRYFDLIYSTKDTKLGNYDNVRVEFKNKDLAD  
KYKDKYVDVFGANAYYQCAFSSKKTNDINSHQTDKRKTCMYGGVTEHNGNQLDKYRSIT/  
VRVFEDGKNLLSFDVQTNKKKVTAQELDYLTRHYLVKNKKLYEFNNSPYETGYIKFIE  
NENSFWDMMPPAPGDKFDQSKYLMYNDNKMVDSKDVKIEVYLTTKKK

**SEQ ID NO: 9**

Staphylococcal enterotoxin B vaccine, B899445C, cytoplasmic  
Gene sequence:

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325 ATGAGT CAACCAGATC CTAAACCAGA  
351 TGAGTTGCAC AAATCGAGTA AATTCAGTGG TTTGATGGAA AATATGAAAG  
401 TTTTGTATGA TGATAATCAT GTATCAGCAA TAAACGTTAA ATCTATAGAT  
451 CAATTTGAT ACTTTGACTT AATATATTCT ATTAAGGACA CTAAGTTAGG  
501 GAATTATGAT AATGTTTCGAG TCGAATTTAA AAACAAAGAT TTAGCTGATA  
551 AATACAAAGA TAAATACGTA GATGTGTTTG GAGCTAATGC TTATTATCAA  
601 TGTGCTTTTT CTAAAAAAC GAATGATATT AATTCGCATC AAACAGACAA

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651 ACGAAAACT TGTATGTATG GTGGTGTAAC TGAGCATAAT GGAAACCAAT  
701 TAGATAAATA TAGAAGTATT ACTGTTCCGGG TATTTGAAGA TGGTAAAAAT  
751 TTATTATCTT TTGACGTACA AACTAATAAG AAAAAAGGTGA CTGCTCAAGA  
801 ATTAGATTAC CTAACGTC ACTATTTGGT GAAAAATAAA AACTCTATG  
10  
851 AATTTAACAA CTCGCCCTTAT GAAACGGGAT ATATTAAATT TATAGAAAAT  
901 GAGAATAGCT TTTGGTATGA CATGATGCCT GCACCAGGAG ATAAATTTGA  
951 CCAATCTAAA TATTTAATGA TGTACAATGA CAATAAAATG GTTGATTCTA  
15  
1001 AAGATGTGAA GATTGAAGTT TATCTTACGA CAAAGAAAAA GTGAAATTAT  
1051 ATTTTAGAAA AGTAAATATG AAGAGTTAGT AATTAAGGCA GGCACCTATA  
20  
1101 GAGTACCTGC CTTTCTAAT ATTATTTAGT TATAGTTATT TTTGTTATAT  
1151 CTCTCTGATT TAGCAATTAAC CCCTTGTTGC CATTATAGTT TTCACCAACT  
1201 TTAGCTGAAA TTGGGGGATC ATTTTATCT TTAGTATGGA TAGTTACTGT  
25  
1251 GTCGCCGTTT TTAACGATTT GTTCTCTTT TAATTTGTCA GTTAATTTTT  
1301 TCCATGCATC ATTTGCGTCA AACCTATTTT CATTGGATT TATTCTTGAC  
1351 AAATCAATTC TTTTAACACT ATCGGTATTA ATCGGCTTGT TATTAAAATT  
30  
1401 ACTAAGTTCA TCTAAATCAG CTGTACCCGT AATACTACTT TCGCCACCAT  
1451 TATTTAAATT GTACGTAACA CCAACTGTCT CATTTGCTGT TTTATCGATA  
35  
1501 ATATTTGCTT CTTTCAAAGC ATCTCTTACA TTTTCCATA AGTCTCTATC  
1551 TGTTATTTC AAGCCCTTG CAACGTTATT AATACCATTA TAATTTGAAG  
40  
1601 AAGAATGAAA ACCTGAACCT ACTGTTGTTA AACTAAAGC ACTTGCTATC  
1651 AATGTTCTTG TTAATAGTTT TTTATTCATT TTATTTCTC CTATAACTTA  
45  
1701 TTTGCAATCG AT

**SEQ ID NO:10**

Staphylococcal enterotoxin B vaccine, B899445C, cytoplasmic  
Amino acid sequence:

50 MSQPDPKPDELHKSSKFTGLMENMKVLYDDNHVSAINVKSIDQFRYFDLIYSIKDTKL  
GNYDNVRVEFKKDLADKYKDKVVDVFGANAYYQCAFSKKTNDINSHQTDKRKTCMYG



120  
 GVTEHNGNQLDKYRSITVRVFEDGKNLLSFDVQTNKKKVTAQELDYLTRHYLVKNKKL  
 YEFNNSPYETGYIKFIENENSWFYDMMPAPGDKFDQSKYLMYNDNKMVDSKDVKIEV  
 200  
 YLTTKKK

**SEQ ID NO: 11**

Staphylococcal toxic shock syndrome toxin-1 vaccine TST30  
 Gene sequence:

1 TAAGGAGAAT TAAAAATGAA TAAAAAATTA CTAATGAATT TTTTATCGT  
 51 AAGCCCTTTG TTGCTTGCGA CAACTGCTAC AGATTTTACC CCTGTTCCCT  
 101 TATCATCTAA TCAAATAATC AAAACTGCAA AAGCATCTAC AAACGATAAT  
 151 ATAAAGGATT TGCTAGACTG GTATAGTAGT GGGTCTGACA CTTTACAAA  
 201 TAGTGAAGTT TTAGATAATT CAGAGGATC TATGCGTATA AAAACACAG  
 251 ATGGCAGCAT CAGCTTGATA ATTTTCCGA GTCCTTATTA TAGCCCTGCT  
 301 TTTACAAAAG GGGAAAAAGT TGA CTTAAAC ACAAAAAGAA CTAAAAAAG  
 351 CCAACATACT AGCGAAGGAA CTTATATCCA TTTCCAAATA AGTGGCGTTA  
 401 CAAATACTGA AAAATTACCT ACTCCAATAG AACTACCTTT AAAAGTTAAG  
 451 GTTCATGGTA AAGATAGCCC CTAAAGTAT GGGCCAAAGT TCGATAAAAA  
 501 ACAATTAGCT ATATCAACTT TAGACTTTGA AATTCGTCAT CAGCTAACTC  
 551 AAATACATGG ATTATATCGT TCAAGCGATA AAACGGGTGG TTATTGGAAA  
 601 ATAACAATGA ATGACGGATC CACATATCAA AGTGATTTAT CTAAAAAGTT  
 651 TGAATACAAT ACTGAAAAAC CACCTATAAA TATTGATGAA ATAAAAACTA  
 701 TAGAAGCAGA AATTAATTAA TTTACCACTT T

**SEQ ID NO: 12**

Staphylococcal toxic shock syndrome toxin-1 vaccine TST30  
 Amino acid sequence:

MKKLLMNFFIVSPLLLATTATDFTPVPLSSNQIIKTAKASTND  
 NIKDLLDWYSSGSDFTNSEVLDNSRSGSMRIKNTDGSISLIIFSPYYSPAFTKGEKV  
 DLNTRTKKSQHTSEGTYIHFIQISGVTNTEKLPPIELPLKVHVHGKDSPLKYGPKFD

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751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAATCTAG AGGAGAACCC AGATATAAAA

751 GGTGAATTGT AATAACCTTT TTAAATCTAG AGGAGAACCC AGATATAAAA

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FDIETNKKMVT AQELDYKVRKYLT DNKQLYTNGPSKYETGYIKFIPKNKESFWFDFFP

EPEFTQSKYLMYKDNETLDSNTSQIEVYLTK

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